

## REMARKS/ARGUMENTS

The Applicant provides the following remarks and argument for consideration in further examination of the present application and explanation of the amendments presented herein.

### Specification

The specification is amended as indicated above to correct typographical errors and to ensure consistency between the text and the reference numerals in the drawing figures. No new matter is added by these amendments.

### Drawing Amendments

Sheets 1-3 are amended as described above to ensure consistency between the text and the reference numerals in the figures, to ensure clarity, and to correct misspellings. No new matter is added by these amendments.

### Claim Amendments

Claim 1 is amended to broaden the scope of the claim by removing contextual elements from the preamble.

Claim 5 is amended appropriately indicate the existence of antecedent basis for the terms in the claim.

Claim 7 is amended appropriately indicate the existence of antecedent basis for the terms in the claim. Claim 7 is also amended to remove the extraneous word "value," which Applicant believes was inadvertently introduced due to a drafting error.

Claim 8 is amended appropriately indicate the existence of antecedent basis for the terms in the claim. Claim 8 is further amended to clarify and distinguish between the times for the device to handle the series of tasks by labeling the times "a first time," "a second time," and "a third time."

Claim 9 is amended appropriately indicate the existence of antecedent basis for the terms in the claim. Claim 9 is also amended to depend from claim 7 to correct a typographical error and ensure appropriate antecedent basis for the terms in the claim.

Claim 10 is amended to broaden the scope of the claim by removing contextual elements from the preamble.

Claim 14 is amended appropriately indicate the existence of antecedent basis for the terms in the claim.

Claim 16 is amended appropriately indicate the existence of antecedent basis for the terms in the claim.

Claim 17 is amended appropriately indicate the existence of antecedent basis for the terms in the claim. Claim 17 is further amended to clarify and distinguish between the times for the device to handle the series of tasks by labeling the times “a first time,” “a second time,” and “a third time.”

Claim 18 is amended appropriately indicate the existence of antecedent basis for the terms in the claim. Claim 18 is also amended to depend from claim 16 to correct a typographical error and ensure appropriate antecedent basis for the terms in the claim.

Claim 19 is amended to broaden the scope of the claim by removing contextual elements from the preamble.

Claim 23 is amended appropriately indicate the existence of antecedent basis for the terms in the claim.

Claim 25 is amended appropriately indicate the existence of antecedent basis for the terms in the claim.

Claim 26 is amended appropriately indicate the existence of antecedent basis for the terms in the claim. Claim 26 is also amended to remove the extraneous phrase “incurred by processing a series of tasks” in the “calculating” clause, which Applicant believes was inadvertently introduced due to a drafting error. Claim 26 is further amended to clarify and distinguish between the times for the device to handle the series of tasks by labeling the times “a first time,” “a second time,” and “a third time.”

Claim 27 is amended appropriately indicate the existence of antecedent basis for the terms in the claim. Claim 27 is also amended to depend from claim 25 to correct a typographical error and ensure appropriate antecedent basis for the terms in the claim.

Claim Rejections – 35 U.S.C. § 112

Claims 1-27 are rejected pursuant to 35 U.S.C. § 112 as indefinite. The examiner asserts that the claims fail to accomplish the stated purpose in the preambles of each of the independent claims 1, 10, and 19. Each of the preambles of claims 1, 10, and 19 is amended herein to broaden the scope of the claim and thereby remove any requirement of tying the claim elements to any limitations in the preambles. Applicant asserts that claims 1-27, as presently amended, meet the requirements of § 112 and therefore requests the rejection to the claims on this basis be rescinded.

Claim Rejections – 35 U.S.C. § 101

Claims 1-27 are rejected pursuant to 35 U.S.C. § 101 as directed to nonstatutory subject matter. The Office asserts that the claims “merely present a series of steps/computations without a useful, concrete, and tangible results. In particular, the result of

the recited steps is merely a selection of a value based upon a series of calculations/comparisons.” (Office Action, 19 April 2006, p. 3.) The Office suggests that there should be one or more subsequent steps showing the result of the selection step being used to perform some additional task. *Id.* Applicant disagrees and asserts that the claims as drafted and herein amended are directed to statutory subject matter and fully meet the requirements of § 101.

It appears, pursuant to the analysis of the Office supporting the rejection as summarized above, that the Interim *Guidelines for Examination of Patent Applications for Subject Matter Eligibility* (22 November 2005) (the “Guidelines”) were not followed in examining the present application and claims. In particular, the Guidelines instruct the Office to follow the following procedure when making a determination of subject matter eligibility under § 101.

- 1) Determine whether claimed invention falls within category enumerated in § 101;
- 2) Determine whether the claimed invention falls within a judicial exception to §101;
  - a) Determine whether the claimed invention covers a judicial exception to §101 or a practical application of a judicial exception to §101;
  - b) Determine whether the claimed invention is a practical application of a judicial exception to §101;
    - i) Determine whether there is a physical transformation of matter; or
    - ii) Determine whether a useful, tangible, and concrete result is produced;
- 3) Determine whether the claimed invention preempts public use of a natural phenomenon; and
- 4) Establish on the record a *prima facie* case of subject matter ineligibility.

It is apparent that such a procedure was not followed as there is no analysis of steps 1, 2, 2(a), 2(a)(i), and 2(b), and the analysis under 2(a)(ii) (although not formally identified as such) was merely conclusory and a misapplication of the examination requirements under the Guidelines.

- 1) The claimed invention falls within the category enumerated in § 101.

The four enumerated categories of patentable subject matter set for the in 35 U.S.C. § 101 are process, machine, manufacture, and composition of matter. Claims 1-9 are clearly directed to a process. Claims 10-18 are directed to a machine, characterized as a “system,” with certain functional limitations, which is explicitly acknowledged as falling within the enumerated categories under the Guidelines at IV(B). Claims 19-27 are directed to a manufacture, particularly a computer readable medium, which is explicitly acknowledged as

falling within the enumerated categories under the Guidelines at Annex IV as functional descriptive material, i.e., a computer program that “impart[s] functionality when employed as a computer component.” Thus, Applicant submits that the claims meet the first ground of eligibility under the Guidelines.

2) The claimed invention does not fall within a judicial exception to § 101.

“Excluded from patent protection are laws of nature, natural phenomena, and abstract ideas.” *Diamond v. Diehr*, 450 U.S. 175, 185 (1981). Recognizing this judicial pronouncement, the Guidelines instruct the Office to determine whether a claimed invention falls within these exclusions. The claims of the present application do not encompass a law of nature or natural phenomena as they are generally directed to effecting a result within a computer operation. Abstract ideas have been defined in the Guidelines to include mathematical algorithms. Certain steps of computer programs often involve calculations based upon mathematical algorithms or logical constructs that may be considered algorithmic. Thus, the claims of the present invention, which include calculating steps that may be performed on a computer, may be considered under the Guidelines to encompass an “abstract idea.” However, methods and products employing abstract ideas . . . to perform a real-world function may well be” patentable subject matter. Guidelines at IV(C). In the present invention, independent claims 1, 10 , and 19 each involve similar process steps that, while in part performing a calculation, also perform a real-world function, i.e., the claims provide a power management timer setting based upon the estimated energy value to complete a series of tasks at a particular operational power level. Thus, Applicant asserts that the claims are directed to patentable subject matter and do not fall within any of the recognized judicial exceptions to the categories of § 101.

a) The claimed invention covers a practical application of a judicial exception to § 101.

While an abstract idea per se does not constitute patentable subject matter, a claimed invention does meet the § 101 subject matter requirements when the abstract idea “has been reduced to some practical application rendering it ‘useful.’” *AT&T Corp. v. Excel Communications, Inc.*, 172 F.3d 1352, 1356-57 (Fed. Cir. 1999). In this instance, the claimed invention utilizes a calculation of an estimated energy value for the practical application of selecting an optimal power management timer setting from among a plurality of possible settings.

b) The claimed invention is a practical application of an abstract idea.

The Guidelines instruct patent examiners that a “practical application” of an abstract idea, law of nature, or natural phenomenon is patentable subject matter within the meaning of § 101 “if the claimed invention physically transforms an article or physical object to a different state or thing, *or* if the claimed invention otherwise produces a useful, concrete, and tangible result.” Guidelines at IV(C)(1). Under at least the second independently sufficient part of this test, the claims plainly passes the § 101 threshold.

i) The claimed invention does not involve a physical transformation.

The claimed invention results in the selection of a power management timer setting. The calculation involved as part of the process of determining such a setting, either within the process itself (claims 1-9), a system performing the process (claims 10-18), or a computer readable medium embodying the process (claims 19-27), does not, as claimed, reduce an article to a different state or thing. Thus, the physical transformation test is likely inapplicable to the pending claims.

ii) The practical application in the claimed invention produces a useful, tangible, and concrete result.

Although abstract ideas are not patentable subject matter when they are presented as “merely . . . constituting disembodied concepts or truths that are not ‘useful,’” when abstract ideas are incorporated in a claimed invention as part of a process that produces a “useful, concrete, and tangible result,” the invention satisfies § 101. *State Street Bank & Trust Co. v. Signature Fin. Group, Inc.*, 149 F.3d 1368, 1373-75 (Fed. Cir. 1998). The “result” produced in the claims of the present application is the selection of a power management timer setting, a result that plainly meets the *State Street* factors.

The result produced by the inventive method, system, and manufacture set forth in the claims is clearly “useful” in that the resulting power management timer setting based upon energy value calculations provides an optimal switching interval between power levels and when used by a device minimizes power usage of the device. Such an optimal switching interval embodied in the power management timer setting is clearly useful.

The result produced under claim 13 is also “tangible,” which is defined as the opposite of “abstract.” Guidelines at IV(C)(2)(b)(2). For example, a “process claim must set forth a practical application of that Sect. 101 judicial exception to produce a real-world result.” *Id.* The calculation steps in the claims of the present application are practically applied to produce a real-world result, i.e., the selection of a power management timer setting. The power management timer setting has a tangible, real-life impact or consequence.

When the timer setting is used in a device, the power usage of the device in idle periods is minimized. This results in extended battery life for the device and thus an user's extended ability to use or operate the device. Such a result is clearly tangible.

Finally, the claims produce a "concrete" result. "Concrete" is defined as the opposite of "unrepeatable or unpredictable." Guidelines at IV(C)(2)(b)(3). By calculating the energy values for a series of tasks performed over a plurality of timer settings, a power management timer setting may be selected as a result. The claimed invention yields a predictable, repeatable result in that the lowest energy value for a series of tasks over a range of timer settings will always be calculated and a optimal power management timer setting among the possible settings may always be determined as a result. Thus the "result" produced in the claims of the present application meets the practical application requirements of the Guidelines.

3) The claimed invention does not preempt public use of an abstract idea.

A patent sweeps too broadly if it comprises every "substantial practical application" of a natural phenomenon, because it "in practical effect would be a patent on the [phenomenon] itself." *Gottschalk v. Benson*, 409 U.S. 63, 71-72 (1972). The claims in the application do not attempt to monopolize any use of a calculation for estimating an energy value expended to complete a series of tasks within a device. Instead, Applicants claim a particular application of such a calculation in order to select the most efficient power management timer setting for the device from a plurality of possible settings. No other possible uses for such a calculated energy value are preempted by the claims and the public would be free to use such an energy value calculation, e.g., for determining an energy performance benchmark for the device, or for any other purpose. Therefore, Applicant submits that there is no preemption of public use of an abstract idea by the claimed invention.

4) The Office has not established a prima facie case of subject matter ineligibility.

The Office has the burden to establish a prima facie case of subject matter ineligibility based upon the totality of the evidence. If the record as a whole suggests that it is more likely than not that the claimed invention would be considered a practical application of an abstract idea, natural phenomenon, or law of nature, the examiner should not reject the claim.

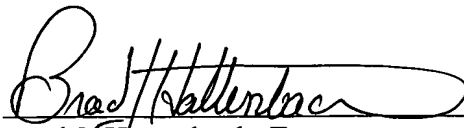
Applicant asserts based upon the argument above, that the Office has failed to establish a prima facie case and that, as demonstrated above, the claims of the present application do in fact meet the practical application requirements set forth in the Guidelines. Applicant thus requests withdrawal of the rejection pursuant to 35 U.S.C. § 101 in view of both the failure of

the Office to follow the examination Guidelines and the demonstrated conformance of the claims to the Guidelines as directed to patentable subject matter.

Conclusion

Applicant has addressed each of the issues raised in the Office action through amendment to the claims as applicable and through argument presented herein. Applicant believes all claims in the application are thus presently allowable and requests a notice of allowability be issued in due course.

Respectfully submitted this 19th day of July 2006.



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### DRAWING AMENDMENTS

Fig. 1 is amended to add reference numeral 132, which is also added to the specification to identify more clearly the flex cable described in the specification on page 5, lines 1-9. Fig. 1 is also amended to add reference numeral 136, which is also added to the specification to identify more clearly the flex bracket described in the specification on page 5, lines 1-9, which was duplicatively assigned reference numeral 134 in the specification, previously assigned to the circuit board. Fig. 1 is additionally amended to reposition the element 130 to better identify the entire flex assembly. Fig. 1 is further amended to relocate reference numeral 134 and the associated lead line to more particularly indicate the location of the circuit board.

Fig. 2 is amended to place an arrow on right end of the line between R/W Channel 146 and the R/W heads 118 on the actuator assembly to indicate communication occurs in both directions as described in the specification on page 6, lines 1-7. Fig. 2 is further amended to provide a box indicating the functional components of the disc drive 100 as separate from the host computer 140.

Fig. 3 is amended to correct the spelling of the term "volatile" misspelled in two instances in the memory element numbered 304.

The Appendix to this Amendment and Response provides replacement drawings sheets for Figs. 1-3 and annotated mark-up sheets showing the corrections made to Figs. 1-3 as originally filed.



APPENDIX

AMENDED DRAWINGS SHEETS 1-3

MARKED-UP DRAWING SHEETS 1-3

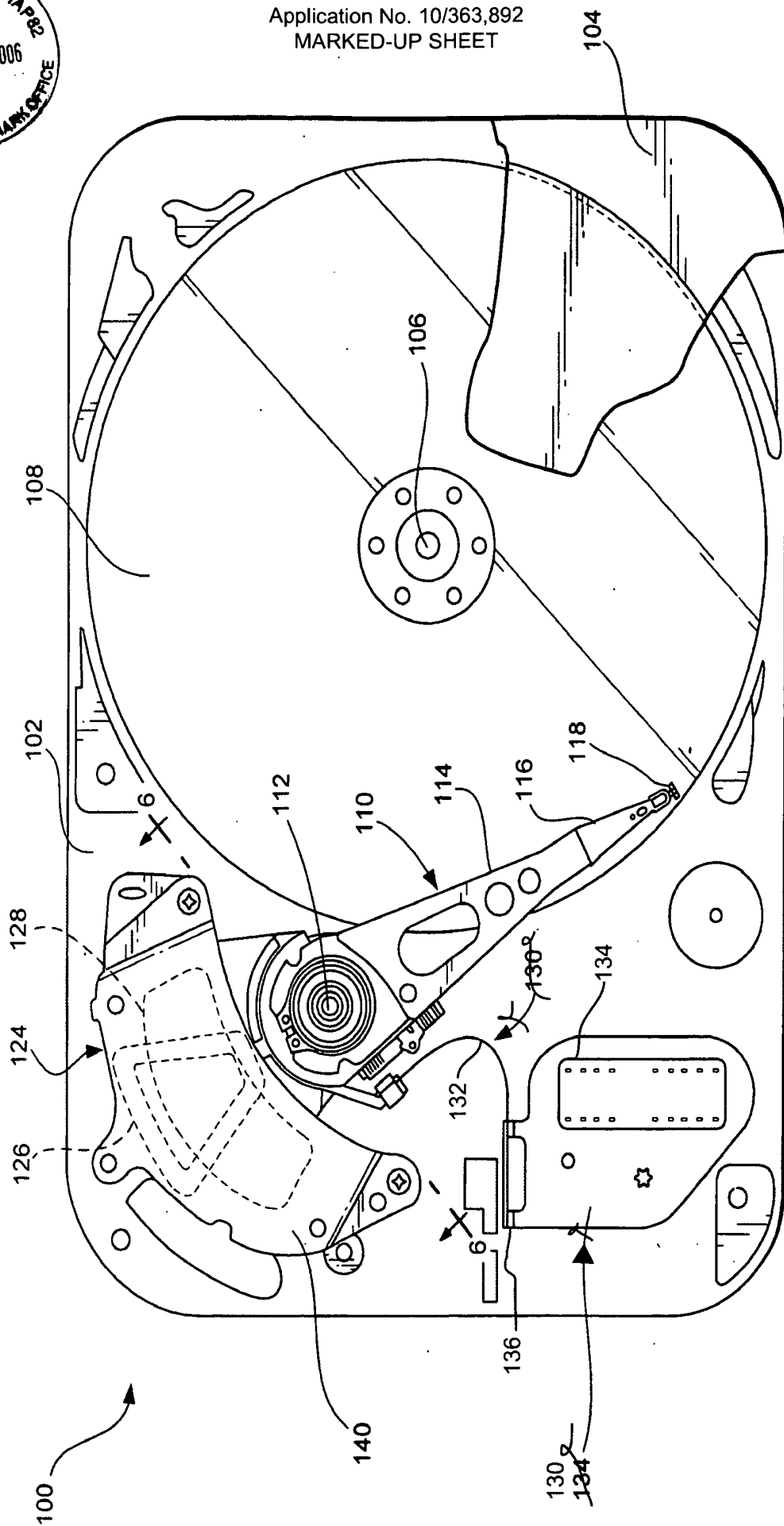


FIG. 1

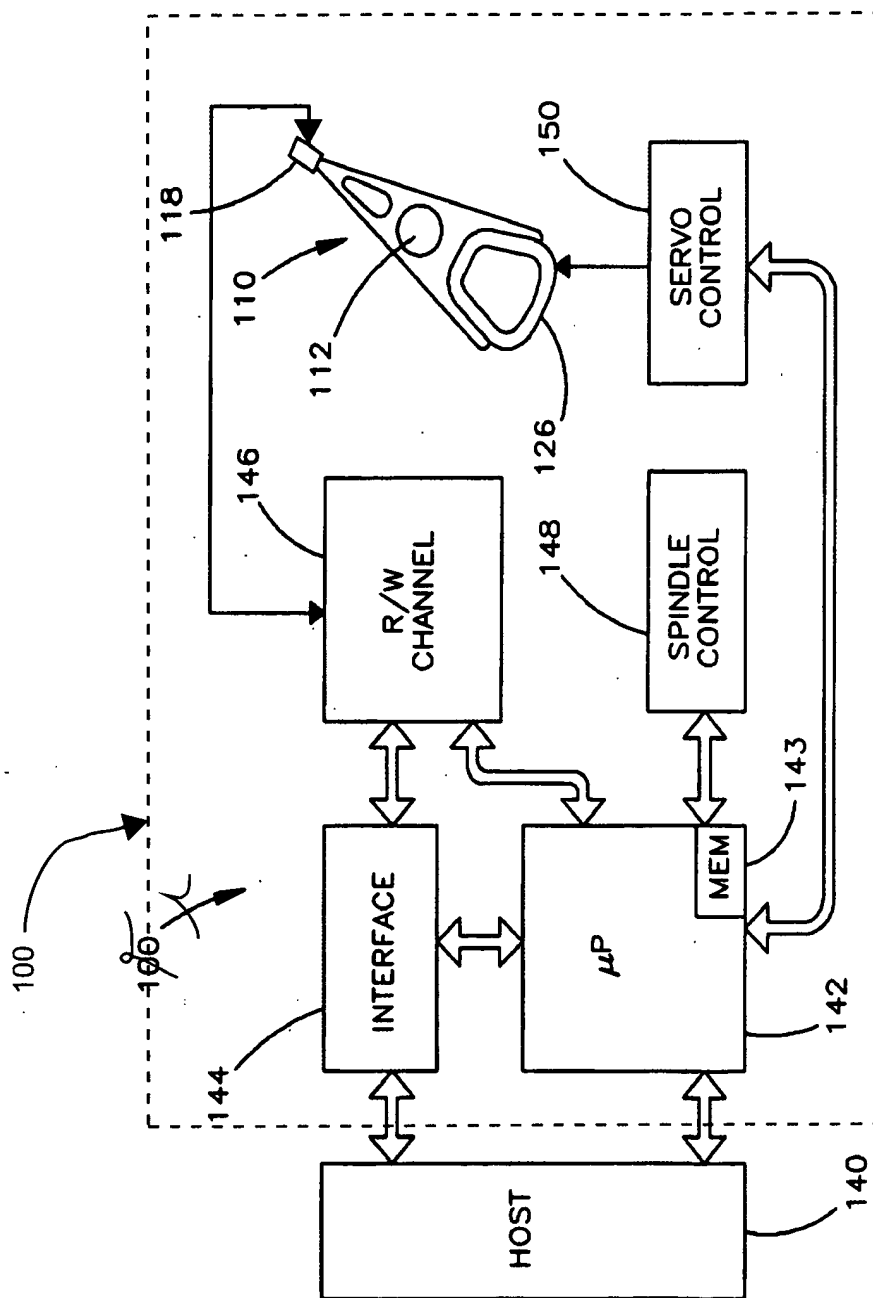
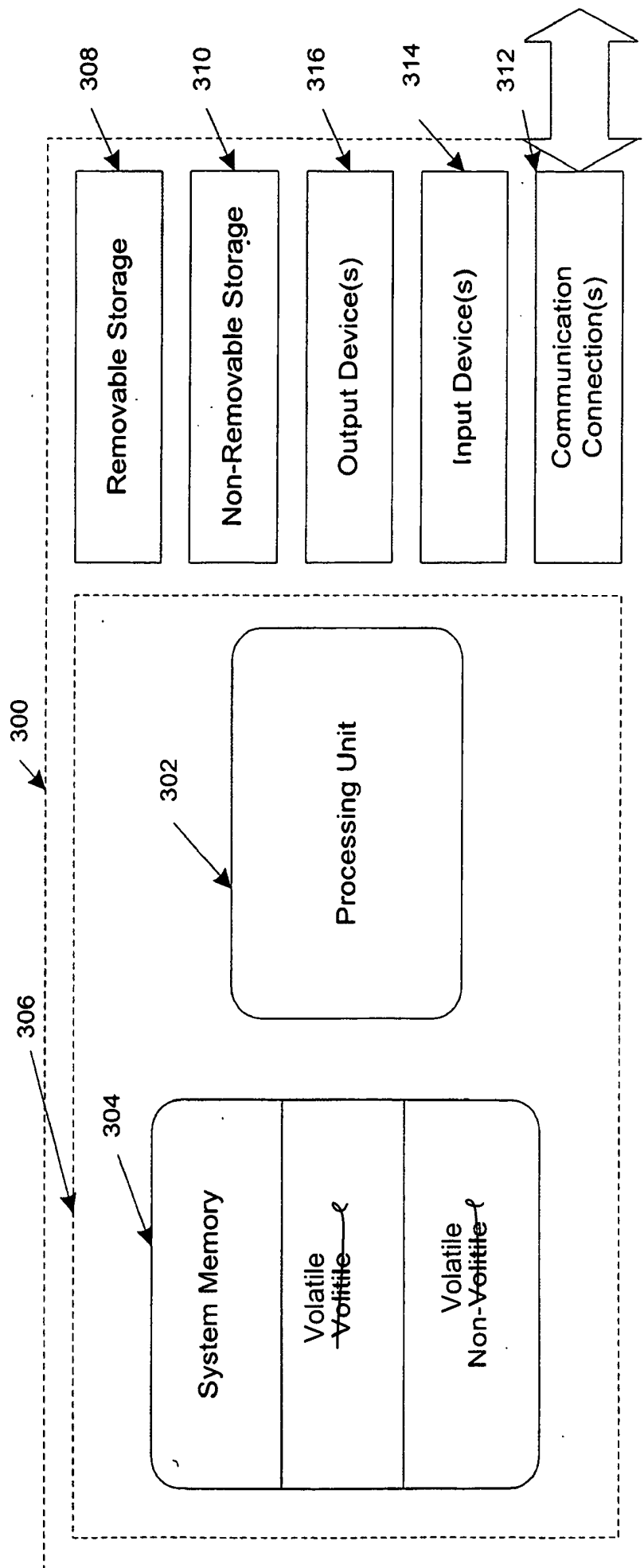


FIG. 2



**FIG. 3**